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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/762,263	03/14/2001	Harri Holma	4925-103PUS	2829

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EXAMINER	
CHO, HONG SOL	
ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 11/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/762,263	HOLMA ET AL.	
	Examiner	Art Unit	
	Hong Cho	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *22-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-32 and 34-43* is/are rejected.

7)☒ Claim(s) *33* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 March 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10182004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This communication is in response to the amendment dated in February 01, 2001. Accordingly, claims 1-21 were canceled as indicated in the amendment. Claims 22-43 are new and currently pending in the instant application.

Drawings

2. New corrected drawing is required in this application because legends are not complete for Figure 6. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 22-27, 29-32, 34, 36-40, and 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidl et al (U.S 6404826), hereinafter referred to as Schmidl, in view of Popovic (U.S 6292519).

Re claims 22, 25, 26, 29, and 30, Schmidl discloses the closed loop power control sequence between of the base station and the mobile station in WCDMA. The base station determines an SIR ratio based on pilot signals from the rake combiner (*controlling transmit power of a signal which is received using a certain number of rake fingers*, column 2, lines 29-35). Schmidl discloses measuring SIR ratio (*determining a value for a controlled variable*, column 2, lines 19-21) and comparing with a target SIR (*comparing the controlled variable to a target variable*, column 2, lines 21-22). Schmidl fails to disclose measuring a discrepancy between the controlled variable value and an actual power signal. Popovic discloses correcting SIR ratio measurement by using a measured SIR correction function (*determining a discrepancy for the controlled variable using at least the number of rake fingers used receiving the signal*, column 8, lines 12-14). It would have been obvious to one having ordinary skill in the art at the time the invention was made to implement the function of Popovic into Schmidl to get a corrected SIR ratio and use it to compare to the targeted SIR (*taking into account said discrepancy when comparing the controlled variable value to the target value*). The motivation to combine is to minimize error between corrected SIR values and corresponding actual or ideal SIR values (column 4, lines 53-56).

Re claim 23, Schmidl discloses measuring a received signal strength indicator (RSSI) estimate from an average of received pilot signals (*determining a signal power estimate*

using a certain part of the radio channel, column 2, lines 13-15), measuring an interference signal strength indicator estimate (ISSI) (*determining an interference estimate*, column 2, lines 16-18), and producing an SIR estimate from a ration of RSSI signal to ISSI signal (*a controlled variable is determined using said signal power estimate and said interference estimate*, column 2, lines 19-21).

Re claim 24, Schmidl discloses comparing measured SIR value to the target SIR value. Schmidl fails to disclose comparing signal power estimate with the actual signal power and interference estimate with the actual interference separately. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to measure the difference between signal power estimate with the actual signal power and interference estimate with the actual interference separately and use it for comparing to the target SIR value.

Re claim 27, Schmidl fails to discloses eliminating discrepancy from the controlled variable value. However, Popovic discloses getting a correct measured SIR value from a measured SIR correction function (*eliminating discrepancy from the controlled variable value*, column 7, lines 17-20). It would have been obvious to one having ordinary skill in the art at the time the invention was made to get a corrected SIR value from Popovic and use it to compare to the targeted SIR in Schmidl to minimize error between corrected SIR values and corresponding actual or ideal SIR values.

Re claim 31, Schmidl discloses a target error rate from reference circuit (*target value is the same for all connections used to carry a certain service*, column 2, lines 5-6).

Re claim 32, Schmidl discloses measuring SIR ratio (*determining a value for a controlled variable*, column 2, lines 19-21) and comparing with a target SIR (*comparing the controlled variable to a target variable*, column 2, lines 21-22) for a receiver. Popovic discloses correcting SIR ratio measurement by using a measured SIR correction function (*determining a discrepancy for the controlled variable using at least the number of rake fingers used receiving the signal*, column 8, lines 12-14) for a receiver. Neither Schmidl nor Popovic disclose measuring a discrepancy between the controlled variable value and an actual power signal for a plurality of receivers. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply Popovic's measurement process of SIR ratio for a receiver into Schmidl for a plurality of receivers.

Re claims 34, 37-40, and 43, Schmidl discloses a base station or a radio network controller determining an SIR ration based on pilot signals from the rake combiner in WCDMA (*controlling transmit power of a signal which is received using a certain number of rake fingers*, column 2, lines 29-35). Schmidl discloses measuring SIR ratio (*determining a value for a controlled variable*, column 2, lines 19-21) and comparing with a target SIR (*comparing the controlled variable to a target variable*, column 2, lines 21-22). Schmidl fails to disclose measuring a discrepancy between the controlled variable value and an actual power signal. Popovic discloses correcting SIR ratio measurement by using a measured SIR correction function (*determining a discrepancy for the controlled variable using at least the number of rake fingers used receiving the signal*, column 8, lines 12-14). It would have been obvious to one having ordinary skill

in the art at the time the invention was made to implement the function of Popovic into Schmidl to get a corrected SIR ratio and use it to compare to the targeted SIR (*taking into account said discrepancy when comparing the controlled variable value to the target value*). The motivation to combine is to minimize error between corrected SIR values and corresponding actual or ideal SIR values (column 4, lines 53-56).

Re claim 40, it would have been obvious to one having ordinary skill in the art at the time the invention was made to implement all the features of Popovic with Schmidl as discussed in the rejection of claim 34 into a mobile station since the transmit power control in each mobile and base station in WCDMA is important.

Re claims 36 and 42, Schmidl discloses measuring a received signal strength indicator (RSSI) estimate from an average of received pilot signals (*determining a signal power estimate using a certain part of the radio channel*, column 2, lines 13-15), measuring an interference signal strength indicator estimate (ISSI) (*determining an interference estimate*, column 2, lines 16-18).

Re claim 42, it would have been obvious to one having ordinary skill in the art at the time the invention was made to implement all the features of Popovic with Schmidl as discussed in the rejection of claim 36 into a mobile station since the transmit power control in each mobile and base station in WCDMA is important.

Claims 28, 35, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidl in view of Popovic, and in further view of Engstrom et al (U.S 6639934), hereinafter referred to as Engstrom.

Re claim 28, neither Schmidl nor Popovic disclose modifying a target value to comprise said discrepancy. However, Engstrom discloses adjusting SIR target value by combining proposed SIR target value and SIR error value (*discrepancy*, column 5, lines 16-22). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Schmidl and Popovic to include a function to adjust SIR target value to compensate for SIR error value.

Re claims 35 and 41, Schmidl fails to discloses eliminating discrepancy from the controlled variable value. However, Popovic discloses getting a correct measured SIR value from a measured SIR correction function (*eliminating discrepancy from the controlled variable value*, column 7, lines 17-20). It would have been obvious to one having ordinary skill in the art at the time the invention was made to get a corrected SIR value from Popovic and use it to compare to the targeted SIR in Schmidl to minimize error between corrected SIR values and corresponding actual or ideal SIR values.

Neither Schmidl nor Popovic disclose modifying a target value to comprise said discrepancy. However, Engstrom discloses adjusting SIR target value by combining proposed SIR target value and SIR error value (*discrepancy*, column 5, lines 16-22). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Schmidl and Popovic to include a function to adjust SIR target value to compensate for SIR error value.

Re claim 41, it would have been obvious to one having ordinary skill in the art at the time the invention was made to implement all the limitations as discussed in the rejection of

claim 35 into a mobile station since the transmit power control in each mobile and base station in WCDMA is important.

Allowable Subject Matter

5. Claim 32 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 32 is allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose sending a same target value to al the receivers for being taken into account in each receiver.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US Patent (6542562) to Ostberg et al discloses approximated MMSE-based channel estimation in a mobile communication system
- US Patent (6337988) to Agin et al discloses method for improving performances of a mobile radio communication system using a power control algorithm

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hong Cho whose telephone number is 571-272-3087. The examiner can normally be reached on Mon-Fri during 7 am to 4 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-3088. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hong Cho
Patent Examiner
10-18-2004

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